DECEMBER 1913 VOL. 35 No. 12

# THE JOURNAL

OF

# THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

PUBLICATION OFFICE, 29 WEST 39TH STREET . . . NEW YORK

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## COMING MEETINGS OF THE SOCIETY

*December* 2-5, *Annual Meeting*, Engineering Societies Building, New York.

*December* 9, *Philadelphia, Pa.* Topic: How Far Shall Judgment be Exercised in the Interpretation of Engineering Specifications? Twenty-minute papers from various prominent engineers.

*December* 18, *Boston, Mass.* Paper: Methods of Protecting Large Electric Transmission Systems, G. A. Burnham.

# THE JOURNAL
OF
# THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

VOL. 35 DECEMBER, 1913 NUMBER 12

## ANNOUNCEMENT

Beginning with the January 1914 number, The Journal will be issued in a new and enlarged form in the standard 9 by 12 size now so generally adopted by the leading technical journals in this country, and to some extent abroad. This development of The Journal is the result of an extended study by the Publication Committee, upon request of the Council, of the whole question of the publications of the Society. It is designed to make The Journal a distinctive publication, adequate to the needs of the large membership with its diversified interests.

The activities of the Society are rapidly increasing in many fields, meetings are held in a dozen cities, and a number of committees are engaged upon reports and investigations, all of which has resulted in a constantly increasing amount of material valuable for publication. It is the purpose of the Journal to present this material to the membership month by month, in convenient and attractive form. The Foreign Review not only will be continued, but in so far as feasible will be extended. The advance papers for the meetings will be printed as usual in pamphlet form in octavo size for distribution before and at the meetings.

## FIFTH NATIONAL CONSERVATION CONGRESS

The Society was represented at the Fifth National Conservation Congress, held in Washington, D. C., on November 18, 19 and 20, 1913, by the chairman of its Committee on Conservation, Dr. Geo. F. Swain, and by Charles Whiting Baker and Calvin W. Rice, Secretary, members of the committee, as well as by General Wm. H. Bixby, United States Engineer, and Dr. Joseph A. Holmes, director of the Bureau of Mines.

Dr. Swain, besides being chairman of the Society's committee, is chairman of the Water Power Committee of the Congress, about whose report centered the major portion of the discussion of the Congress. As this committee was unable to agree on all features of the majority report, there was also a minority report, as well as a memorandum of those features on which the committee was not in accord. The latter document was finally adopted by the Congress.

Over a thousand delegates were in attendance and extraordinary interest was displayed in all features of the program.

## WASHINGTON SOCIETY OF ENGINEERS

The delegates at the Congress representing the Society attended a dinner given by the Washington Society of Engineers on Tuesday evening, November 18. This Society comprises in a manner similar to the engineering societies in Boston and St. Louis the members of the four national engineering societies. Addresses were made at the dinner by Dr. Swain, Dr. Holmes, John Hays Hammond, members of the Society, and by Admiral Baird, Dr. Wylie and John Foord. Running through the addresses was a note of encouragement to the engineer to take a more prominent part in public affairs.

## APPLICATIONS FOR MEMBERSHIP

Members are requested to scrutinize with the utmost care the following list of candidates who have filed applications for membership in the Society. The Membership Committee and in turn the Council urge the members to assume their share of the responsibility of receiving these candidates into the membership by advising the Secretary promptly of any one whose eligibility for membership is in any way questioned. Members will be furnished with complete records of any candidate thus questioned. All correspondence in regard to such matters is strictly confidential and is solely for the

good of the Society, which it is the duty of every member to promote. These candidates will be balloted upon by the Council unless objection is received before January 10, 1913:

ABBOTT, EDWARD R., N. Y. Rep., The Taft-Pierce Mfg. Co., New York
ALEXANDER, DURAND C., Foreign Rep., Niles-Bement-Pond Co., New York
ALLISON, JAMES E., Cons. Engr., 300 Security Bldg., St. Louis, Mo.
ANGELL, HARRY J., With Goulds Mfg. Co., Seneca Falls, N. Y.
BASSETT, ROYAL M., Mgr. Chicago Office, Murphy Iron Wks. of Detroit, Chicago, Ill.
BAUHAN, ALEXANDER E., Station Supt., Pennsylvania Water & Power Co., Holtwood, Pa.
BEHNEY, CHARLES C., Mech. Engr., Simplex Valve & Meter Co., Philadelphia, Pa.
BERGES, ARTHUR H., Draftsman, Chicago & Western Indiana R. R. Co., Chicago, Ill.
BILLINGS, JOHN H., Instr., University of Missouri, Columbia, Mo.
BOLES, CHALMERS B., Engr., Sulzberger & Sons Co. of Amer., Chicago, Ill.
BROWN, JAMES W., Engr., Cadillac Motor Car Co., Detroit, Mich.
CLARK, EDWARD H., First Asst. Engr., Mass. Inst. of Tech., Boston, Mass.
DEAN, PETER P., Sales Engr., Diehl Mfg. Co., Elizabeth, N. J., and New York
FLEXER, SAMUEL E., Mech. Engr., Clinchfield Portland Cement Corp., Kingston, Tenn.
FISLER, AMOS C., Designing & Erecting Engr., Simplex Valve & Meter Co., Philadelphia, Pa.
GOETZ, ARNOLD H., Asst. Mgr., Kroeschell Bros. Ice Mch. Co., Chicago, Ill.
GRAVES, LOUIS W., Member of Firm, Samuel M. Green Co., Springfield, Mass.
GREF, WILLIAM H., Engr., Gibbs & Hill, New York
HAMILTON, JOHN R., Master Mech., Automatic Sprinkler Co. of Amer., New York
HOLLEY, GEORGE M., Pres., Holley Bros. Co., Detroit, Mich.
ISERT, J. G. HUNT, Genl. Supt., and Mech. Engr., W. T. Pyne Mill & Supply Co., Louisville, Ky.
KENNEDY, SAMUEL S., Cons. Engr., Winnipeg, Manitoba, Canada
KRABBE, ADOLPH F., Ch. Engr. & Genl. Supt., Olympic Portland Cement Co., Ltd., Bellingham, Wash.
LINDHOLM, ARTHUR C., Tool Designer, Metropolitan Engrg. Co., Brooklyn, N. Y.
MERRILL, ALBERT A., Aeronautical Engr., Mass. Inst. of Tech., Boston, Mass.
MILLARD, REGINALD W., Genl. Mgr., Foster, Merriam & Co., Meriden, Conn.
MITCHEL, ALBERT H., N. Y. Rep., The Taft-Pierce Co., New York
MOORE, FRANCIS G., Mech. Engr., J. H. Williams & Co., Brooklyn, N. Y.
NELIS, JOSEPH J., Sales Rep., The Babcock & Wilcox Co., Cincinnati, Ohio
NEWTON, NATHAN ALEXANDER, Sales & Cons. Engr., National Transit Co., Oil City, Pa.
OPHULS, FRED, Cons. Refrigerating Engr., 50 Church St., New York
ORBISON THOMAS E., Asst. Engr. to Thos. W. Orbison, Cons. Engr., Appleton, Wis.
PFEIFFER, ALOIS J. J., Cons. Engr., 3 St. Helens Pl., London, E. C., England
PHIPPS, WALTER, Pres. & Supt. of Production, Massnick Phipps Mfg. Co., Detroit, Mich.
RILEY, LEWIS A., 2ND, Cons. Mech. Engr., 95 Liberty St., New York
RIPPLE, PAUL W., Power & Equipt. Engr. for various traction companies, New Haven, Conn.
ROSENTHAL, EMANUEL, Instr. of Manual Training, Board of Education, New York
SAHMEL, VIGGO, Cons. Engr., 50 Church St., New York
SCHOENKY, OTTO B., Genl. Foreman, Car Dept., Southern Pacific Co., Sacramento, Cal.
SCOTT, HOWARD B., With Chalmers Motor Co., Detroit, Mich.
SEARS, HAROLD R., Draftsman, Racine, Truscott, Shell Lake Boat Co., Muskegon, Mich.
SELFRIDGE, SAMUEL W., Experimental Engr., American La France Fire Eng. Co., Inc., Elmira, N. Y.
SHEDD, THOS. C., Asst. in Mech. Engrg., Brown University, Providence, R. I.
SIMONSON, GEORGE M., Elec. Draftsman, California State Dept. of Engrg., Sacramento, Cal.
TAYLOR, DEWITT, McC., Asst. Instr. in Mech. Engrg., Mass. Inst. of Tech., Boston, Mass.
TOMLINES, THOMAS L., Industrial Engr., Stebbins Engrg. & Mfg. Co., Watertown, N. Y.
WOOD, GLEASON, Asst. Supt., Waltham Watch Co., Waltham, Mass.
WYNNE, JOHN H., Mgr., American Locomotive Co., Paterson, N. J.

## PROMOTION FROM JUNIOR

BRIGGS, LEROY E., Staff Engr. in private laboratory, Thos. A. Edison, Orange, N. J.
FREEMAN, PERRY J., Mech. Engr., Gullett Cotton Gin Co., Amite, La.
JOHNSON, JAMES F., Director State Trade School, Bridgeport, Conn.
MARQUIS, FRANKLIN W., Prof. of Steam Engrg., Ohio State Univ., Columbus, Ohio

SWANBERG, FLOYD L., Secy. The D. T. Williams Valve Co., Cincinnati, Ohio
WILSON, GEORGE S., Asst. Prof. of Mech. Engrg., Washington Univ., Seattle, Wash.

## SUMMARY

| | |
|---|---|
| New applications | 48 |
| Promotion from Junior | 6 |
| Total | 54 |

# ANNUAL REPORTS OF STANDING COMMITTEES

## REPORT OF THE FINANCE COMMITTEE

Appended will be found the certified report of the examination of the accounts of the Society, made by Messrs. Struss & Company, for the fiscal year of the Society ending September 30, 1913.

Your Finance Committee reports that the income of the Society for the year ending September 30, 1913, was $117,106.44; the total expenditures, $109,393.68, leaving an excess over income of $7712.76, which it is recommended be turned into the reserve fund, and that all appropriations in excess of actual expenditures be cancelled.

Your Committee further thinks it should be thoroughly understood by the various committees that their appropriations should not be exceeded without the approval of the Council, and that expenditures in excess of appropriations will not be considered with favor by the Council of the Society.

Further, your Finance Committee recommends for the budget for the year to end September 30, 1914, as follows:

| | |
|---|---|
| Finance Committee | $22,375 |
| Membership | 2,100 |
| Increase of Membership Committee | 2,250 |
| House Committee | 2,250 |
| Library Committee | 5,000 |
| Committee on Meetings | 6,500 |
| Publication Committee | 54,750 |
| Research Committee | 100 |
| Power Tests Committee | 1,500 |
| Council | 6,870 |
| Sales | 6,000 |
| John Fritz Medal | 125 |
| Boiler Specifications Committee | 1,000 |
| Total | $110,820 |

It is estimated that the income will be $119,800.

It should be understood that as the year progresses, if the income

shall give evidence of exceeding the estimate, then in cases of necessity, appropriations will be increased.

Respectfully submitted.

R. M. DIXON, *Chmn.*
W. H. MARSHALL
H. L. DOHERTY
W. L. SAUNDERS
W. D. SARGENT
} *Finance Committee*

## APPENDIX TO REPORT

*October 17, 1913*

MR. R. M. DIXON,
CHAIRMAN, FINANCE COMMITTEE
Dear Sir:

In accordance with your instructions, we have examined the books and accounts of The American Society of Mechanical Engineers, for the twelve months ended September 30, 1913.

The results of this examination are set forth in the three exhibits, attached hereto, as follows:

*Exhibit A* Balance Sheet, September 30, 1913
*Exhibit B* Income and Expenses, for the twelve months ended September 30, 1913
*Exhibit C* Receipts and Disbursements for the twelve months ended September 30, 1913

We hereby certify that the accompanying Balance Sheet is a true exhibit of its financial condition as of September 30, 1913, and that the attached statements of Income and Expenses, and Receipts and Disbursements are correct.

Respectfully submitted,
WM. J. STRUSS & CO
*Certified Public Accountants*

### EXHIBIT *A*

BALANCE SHEET, SEPTEMBER 30, 1913

ASSETS

| | | |
|---|---|---|
| Equity in Society's Building (25 to 33 West 39th Street) | $353,346.62 | |
| Equity one-third of cost of land (25 to 33 West 39th Street) | 180,000.00 | |
| | | $533,346.62 |
| Library Books | 13,000.00 | |
| Furniture and Fixtures | 5,000.00 | |
| | | 18,000.00 |
| Stores, including Plates and Finished Publications | | 14,982.85 |

| | | |
|---|---|---|
| New York City 3½% Bonds 1954 (Par $35,000) | | 30,925.00 |
| Cash in Banks representing Trust Funds | | 34,212.40 |
| Cash in Banks for General Purposes | 5,193.12 | |
| Petty Cash on hand | 500.00 | |
| | | 5,693.12 |
| Accounts Receivable | | |
| Membership Dues | 10,185.00 | |
| Initiation Fees | 2,360.00 | |
| Sales of Publication, Advertising, etc. | 12,950.44 | |
| Total | | 25,495.44 |
| M-A Social | | 181.31 |
| German-Resolution Fund | | .60 |
| Advanced Payments | | 2,066.26 |
| | | $664,903.60 |

LIABILITIES

| | | |
|---|---|---|
| Certificates of Indebtedness | | $68,100.00 |
| Funds | | |
| Life Membership Fund | $35,386.07 | |
| Library Development Fund | 4,902.71 | |
| Weeks Legacy Fund | 1,957.00 | |
| | | 42,245.78 |
| Dues paid in Advance | | 2,637.09 |
| Initiation Fees uncollected | | 2,360.00 |
| Initiation Fees paid before due | | 75.00 |
| Unexpended Appropriation 1911–1912 | | 473.28 |
| Unexpended Appropriation 1912–1913 | | 2,586.66 |
| Unappropriated Revenue | | 5,126.10 |
| Reserve (Initiation Fees) | | 50,527.45 |
| Surplus in Property and Accounts Receivable | | 490,772.24 |
| | | $664,903.60 |

## EXHIBIT *B*

INCOME

| | | |
|---|---|---|
| Membership Dues | $69,078.22 | |
| Sales, Gross Receipts | 8,796.90 | |
| Advertising | 37,336.96 | |
| Interest and Discount | 1,894.36 | |
| | | $117,106.44 |

EXPENSES

| | | |
|---|---|---|
| Finance Committee | $22,881.65 | |
| Membership Committee | 3,280.21 | |
| Increase of Membership Committee | 3,802.55 | |
| House Committee | 2,203.78 | |
| Library Committee | 4,143.72 | |
| Meetings Committee | 6,754.21 | |
| Council Committee | 7,965.11 | |
| Publications Committee | 51,743.42 | |
| Research Committee | 34.01 | |
| Power Test Committee | 1,000.00 | |
| History | 51.85 | |
| Sales Expenditures | 5,027.83 | |
| John Fritz | 505.34 | |
| Total | | 109,393.68 |
| Excess of Income over Expenses | | $7,712.76 |

## EXHIBIT C

RECEIPTS

| | | |
|---|---|---|
| Membership Dues[1] | $64,385.99 | |
| Initiation Fees[2] | 17,320.00 | |
| Membership Dues, Initiation Fees, paid in advance | 2,859.84 | |
| Sales of Publications, Badges, and Advertising, etc. | 47,366.60 | |
| Subscription to Land Fund | 110.00 | |
| Interest | 3,309.80 | |
| | 135,352.23 | |
| Cash in Banks and on hand, September 30, 1912 | 32,993.10 | |
| | | $168,345.33 |

DISBURSEMENTS

| | | |
|---|---|---|
| Disbursements for General Purposes | $121,739.81 | |
| Certificates of Indebtedness redeemed | 6,700.00 | |
| | $128,439.81 | |
| Cash in Banks and on hand, September 30, 1913 | 39,905.52 | |
| | | $168,345.33 |

[1] All membership dues are considered income as soon as due and the difference between the item of membership dues under income and the same under receipts, is the amount due in that particular year that was not collected.

[2] Initiation fees by order of the Council are immediately placed in the reserve fund, no portion being applied to income. Certificates of indebtedness for the land of the Engineering Societies Building are being paid off at the rate of $6000 annually, from the amount received for initiation fees, which is an investment of the initiation fees rather than an expense.

## REPORT OF THE HOUSE COMMITTEE

In addition to the routine matters generally assigned to the House Committee, this Committee was entrusted with the management and conduct of the Tuesday evening President's reception, on the occasion of the Annual Meeting of 1912.

In February a complete inventory of the pictures, equipment, books, stores and publications, belonging to the Society, was prepared, and recommendations were made as to how this inventory should be continued and kept up-to-date.

Plans have been started to procure portrait busts in bronze of our two honorary members in perpetuity, and a study of the bust of Alexander L. Holley has been placed in the council room for criticism.

In March the Society received the John Fritz bequests, including the tall clock, the Irving Scott loving cup, medals and diplomas belonging to the late John Fritz. The clock has been installed in the entrance hall, and the Committee has under consideration the display of other memorabilia befitting Mr. Fritz's memory.

Some improvements have been made in the filing systems to take care of new and additional records, and new cabinets have been purchased on the recommendation of the Secretary.

The Committee has continued to procure honorary members' pictures; and, at present, prospects seem to indicate the substantial completion of this collection during the coming year.

Respectfully submitted,

EDW. VAN WINKLE, *Chmn.*
H. R. COBLEIGH
S. D. COLLETT
W. W. DICKINSON
F. A. SCHEFFLER
*House Committee*

## REPORT OF THE LIBRARY COMMITTEE

An important step in the administration of the library has been taken during the past year in the placing of the library under the management of one board. This Board comprises five members from each of the three Founder Societies, and through its work a greater unification of the methods of administration will be possible.

The collections contained in the library make it now probably the best engineering library in the United States, if not in the world. During the past three years about 9000 volumes have been added, largely by gift or exchange, and the list of current periodicals has

grown to about 700. Our Society has added to its section of the library 1103 volumes and 168 periodicals, and has had 316 volumes rebound.

A generous gift of more than a hundred books from the library of the late Charles Wallace Hunt, Past-President of the Society, has recently been received from Mrs. Hunt, and has been placed in stacks accessible to the public. Its many volumes of technical value form a distinct and valuable addition to the library.

The Charles Wallace Hunt Fund, created by a number of Mr. Hunt's friends as a tribute to his memory, has thus far contributed $173.68 for books on the subject of transmission machinery and transmission of material. The treasurer's report is as follows:

HUNT MEMORIAL FUND

| | | |
|---|---|---|
| Subscriptions received (June 26, 1911, to Aug. 18, 1911) | | $400.36 |
| Interest on unexpended balances | | 10.74 |
| Total receipts | | $411.10 |
| Expenses, postage, printing and binding testimonial | $70.27 | |
| Books purchased to date on order of librarian on subject of transmission machinery and transmission of material | 103.41 | |
| Total expenditures | | 173.68 |
| Balance on hand September 26, 1913 | | $237.42 |

The increase in the number of readers has been extremely gratifying. During the past year there has been an increase from 10,000 to 12,000, making an average attendance of about 40 for each working day, and from present indications the number will continue to increase. It is interesting to record that through the correspondence division assistance has been rendered in connection with many engineering projects, such as the Panama canal, the New York aqueduct, the subway construction, the Woolworth building, Grand Central Station, and that, in fact, there are few large industrial corporations which have not received some help from the library.

The reference work has extended the library's usefulness as far as Patagonia, Johannesburg and Australia. This branch of the library's service, by far its most active and important function at the present time, has been wholly developed during the past three years and has been of the greatest value to many members, especially those living at a distance. As the system is now operated, any person, whether a member or not, may have references compiled for him to

the literature upon any subject upon which he desires information. If the sources are not available in the city in which he is located, copies may be made for him, and if the references are to articles published in a foreign language, they will be translated if desired. Copies are made of all such searches, and there are now on file between 400 and 500 of these lists. References prepared by the library have often been used as evidence in large patent suits.

The library contemplates the establishment of branch libraries, or at least the strengthening of the engineering resources of public libraries existing in various cities. Many members of the founder societies have been generous in donations of sets of periodicals and of society transactions, and there have thus accumulated a number of duplicate sets. For such a purpose as that suggested these gifts will be gladly welcomed.

The past year has seen the compilation and publication of the list of serials and society publications, and the preparation of a union list of the technical periodicals in seven of the libraries of the city of New York.

Respectfully submitted,

LEONARD WALDO, *Chmn.*
C. L. CLARKE
ALFRED NOBLE
W. M. MCFARLAND
The Secretary

*Library Committee*

## REPORT OF THE COMMITTEE ON MEETINGS

The total appropriation made for the use of this Committee was $5500. Although the individual members of the Committee worked diligently and did not incur any unnecessary expense, nevertheless the activities of the Society which formed this Committee's duties cost more than the appropriation by about $1500. This deficit was caused by the expenses of the Annual and Spring Meetings which exceeded the appropriation named by the Council for that purpose.

The duties of this Committee do not cease, but are continuous throughout the year. The policy of the Committee has been in accordance with the resolution passed by the Council in January 1913, wherein it was asked that each committee of the Society keep in close touch with the Council in order that there may be a full coöperation.

Early in the year Mr. Willis E. Hall was forced to resign through

business engagements and his place has been filled by Mr. L. P. Alford.

It is with considerable satisfaction the Committee on Meetings is able to report on the valuable work being done for the Society by its sub-committees. Special activity has been promoted by the Committee on Cement Manufacture, by the Committee on Railroads, by the Committee on Fire Protection, by the Committee on Industrial Buildings and by the Committee on Machine Shop Practice. The good work that can be done by these sub-committees when properly organized cannot be over-estimated and such committees should be encouraged by the Society. At the present time there are eleven sub-committees in existence.

The Council appointed a special committee to coöperate with the American Institute of Electrical Engineers in order that there might be a joint meeting between the two societies in December 1913. The Committee on Meetings acquiesced and did what it could to further such a joint meeting. Later in the year the Institute of Electrical Engineers determined that it was not possible to have a meeting in December. In consequence the Committee on Meetings is making arrangements for the Annual Meeting along lines similar to those which have been customary for years past.

As a result of its experience in conducting meetings, the Committee recommends a change in the manner of printing and distributing advance papers to be read at the Annual and Spring Meetings. These now appear in The Journal in complete form during a period of three or four months before a meeting, and the cost is rapidly increasing owing to the increase in the circulation of The Journal.

Only an occasional discussion is received as a result of the published papers. The most effective method for securing discussion is by means of personal letters to engineers known to be interested, accompanied by copies of the papers.

The Committee believes it would be advantageous to have grouped in one number of The Journal in advance of a meeting, brief abstracts of all the papers to be given at that meeting. The members could then see at a glance what papers were to be discussed, and could quickly determine the nature of their contents and the author's conclusions. At the meetings all the papers will be on hand in pamphlet form.

The Committee therefore recommends the following plan:

*a* That papers be published complete in pamphlet form in

advance of a meeting, but not in The Journal prior to the meeting.

*b* That abstracts of perhaps 500 words each, or about ten per cent of the entire paper, of all the papers for a given meeting be grouped and published in one number of The Journal at least one month in advance of the meeting.

*c* That announcement be made each time by circular, return postal, or in The Journal, that copies of complete papers on any subject will be sent free to any member asking for them for the purpose of contributing a discussion.

*d* It is assumed that after the meeting, the papers and discussion will be printed and distributed in substantially complete form, either in The Journal or in Transactions.

The Committee endorses the policy established last year of individual payments by those participating in the social entertainments of the Annual and Spring Meetings of the Society.

Respectfully submitted,

H. DE B. PARSONS, *Chmn.*
L. P. ALFORD
H. E. LONGWELL
H. L. GANTT
R. H. FERNALD
*Committee on Meetings*

## REPORT OF COMMITTEE ON MEMBERSHIP

During the past year the Committee on Membership has held nine meetings for the transaction of its work.

The number of applications acted upon is as follows:

| | |
|---|---|
| Applications pending Oct. 1, 1912 | 163 |
| Applications received during fiscal year Oct. 1, 1912 to Sept. 30, 1913 | 1046 |
| Total | 1209 |

On these applications the following action was taken:

| | |
|---|---|
| Recommended for membership | 868 |
| Withdrawn for various reasons | 2 |
| Deferred indefinitely | 7 |
| Deferred for further information | 3 |
| Applications pending receipt of endorsements from required number of references | 329 |
| Total | 1209 |

It was also voted to reinstate 8 members.

In accordance with the amendments to the Constitution which became effective at the Spring Meeting last May the method of electing members has been changed from that of election by the membership at large to election by the Council. This method obviates the necessity of publishing the expensive professional service sheet, the last issue of which was forwarded to the membership last March and consisted of a 208-page book containing the records of 619 candidates for membership.

In 1911–1912, 694 candidates were voted upon at an expense of $3567.16, or $5.14 per candidate. During the year just completed 868 candidates have been recommended for membership at a cost of $3280.21, or $3.78 per candidate, thereby reducing the cost 26 per cent.

On the Professional Service Sheets issued in October 1912 and March 1913, 929 candidates appeared, but those included in the October 1912 issue were passed upon by the Membership Committee during the fiscal year of 1911–1912.

In the same way a portion of the 868 candidates passed upon in the fiscal year 1912–1913 will not be voted upon by the Council until the year 1913–1914.

Respectfully submitted,

HOSEA WEBSTER, *Chmn.*
THEO. STEBBINS
W. H. BOEHM
H. C. MEYER, JR.
L. R. POMEROY
*Membership Committee*

## REPORT OF THE PUBLICATION COMMITTEE

In the publication of Transactions and The Journal the Publication Committee has to handle an increasing amount of material from year to year, and during the past year it has in consequence been necessary to resort to condensation of papers and discussion to a greater extent than usual. Even with such condensation the point has been reached where it is impossible to issue the Transactions at an expense of less than $10,000, and next year it is expected that this will increase to $11,000.

For the third consecutive year The Journal has been self-supporting and besides publishing reports of all the meetings held in different cities, has continued the Foreign Review and printed considerable other matter not incorporated in the annual volume of Transactions.

The Journal is thus becoming more and more the representative publication of the Society.

The Committee has prepared copy for an adequate index to the first thirty volumes of Transactions, which is now ready to put into the hands of the printer. When issued this will fill a real need, since only twenty-five of the volumes have heretofore been covered by a general index, which was, moreover, incomplete.

In accordance with a resolution of the Council asking the Committee to look into the whole situation of the publications of the Society and to report their conclusions, this matter has been studied in its various phases with a great deal of care, with a view to adapting the publications to the present and future needs of the Society.

Before the establishment of The Journal it was the custom of the Society to issue the papers in pamphlet form previous to the two meetings held each year, which were then the only meetings. At the end of the year, an annual volume was issued containing these same papers with the discussion upon them. With the introduction of The Journal papers were issued previous to the meetings, both general and local, and as soon as possible thereafter the discussion appeared. Of late a condensation of these same papers and discussion has been necessary in a number of instances before their reproduction in Transactions, and lack of space has also compelled the omission of a few.

The Committee believes that under present conditions the monthly publication of a great engineering society should be of much broader scope and that the reports of meetings and accounts of Society affairs in general should become the predominating features. The papers should be published in the numbers following a meeting, instead of in advance, enabling the papers and discussion to be brought together in the form of reports, and presented in the same manner in which any technical journal would deal with the affairs of the day. Under such an arrangement of papers and discussion not only would the value of The Journal to the membership be enhanced, but the arrangement would be such that it could take the place of Transactions.

In regard to the latter, the arguments in favor of issuing The Journal in such form that it will itself consist of the Transactions, thus making unnecessary the duplicate publication of part of the matter appearing in The Journal, are as follows:

1 The declining value to the average member of the Society of such a publication as Transactions, which at best

covers but a narrow part of the broad expanse of the full activity of the Society, as compared with the increasing value of such a publication as The Journal, which besides doing just what the Transactions does, also covers every other activity of the Society.

2 The increasing cost of Transactions, due to the increase in editorial work necessary to reduce to the limits of one volume the large number of papers now being read all over the United States in the various branches of the Society as well as at the Annual Meetings. Should the alternative be adopted, namely of a two-volume edition, the cost would then be prohibitive.

3 The advantage to the membership of having these funds available for other and more useful purposes.

4 The elimination of the economic waste now incurred by publishing in two places the papers presented before the Society, a practice which has never been indulged in by the great European Societies, and which is customary with only three other American societies.

The Committee is of the opinion that The Journal can be made to render a greater service to the membership and would be more inviting to the reader if issued in the standard 9 by 12 size already used by some technical societies, and now coming to be adopted so generally by the technical press in this country and to some extent abroad. Substantially this size is used by such leading professional societies of the world as the Verein deutscher Ingenieure, the Institute of Naval Architects, the American Medical Association, and the American Society of Naval Architects, and has recently been adopted by the American Institute of Architects and the British Institution of Electrical Engineers. The journals of the Verein and of the American Medical Association are the most successful professional journals in the world.

As a result of their investigations, the Committee believes that the needs of the Society would best be served by adopting the following methods of publication:

1 Papers to be printed in pamphlet form (9 x 6 size) complete in advance of a meeting, but not published in The Journal prior to the meeting.

2 Abstracts (of perhaps 500 words each) of all the papers for a given meeting to be grouped and published in one number of The Journal at least one month in advance of the meeting.

3 Announcement to be made each time by circular, return postal or in The Journal, that copies of complete papers on any subject will be sent free to any member asking for them.

4 That papers and discussion be published together in issues of The Journal following the meeting at which they are presented.

By this procedure there will appear in The Journal at an earlier date than is possible in the annual volume of Transactions the revised papers and discussion given at meetings, and when published in this way The Journal will contain the Transactions of the Society in complete form and will be worthy of binding and preservation by the membership.

Respectfully submitted,

G. I. Rockwood, *Chmn.*
G. M. Basford
C. I. Earll
I. E. Moultrop
F. R. Low

*Publication Committee*

## REPORT OF THE RESEARCH COMMITTEE

The activities of the Research Committee have been confined this year to the Sub-Committee on Safety Valves, P. G. Darling, Chairman.

This sub-committee has been engaged during the past year in gathering all available information on the design, construction, and rating of safety valves for steam boilers. The work has been done through correspondence with individuals and companies who are specialists in this field, and the responses have been very encouraging. The committee expects in the near future to be able to proceed with the work of formulating rules governing the design of safety valves and the rating of valves of a given size.

Respectfully submitted,

R. H. Rice, *Chmn.*
L. S. Marks
A. L. De Leeuw
Rolla C. Carpenter
R. D. Mershon

*Research Committee*

# THE JOURNAL

*of*

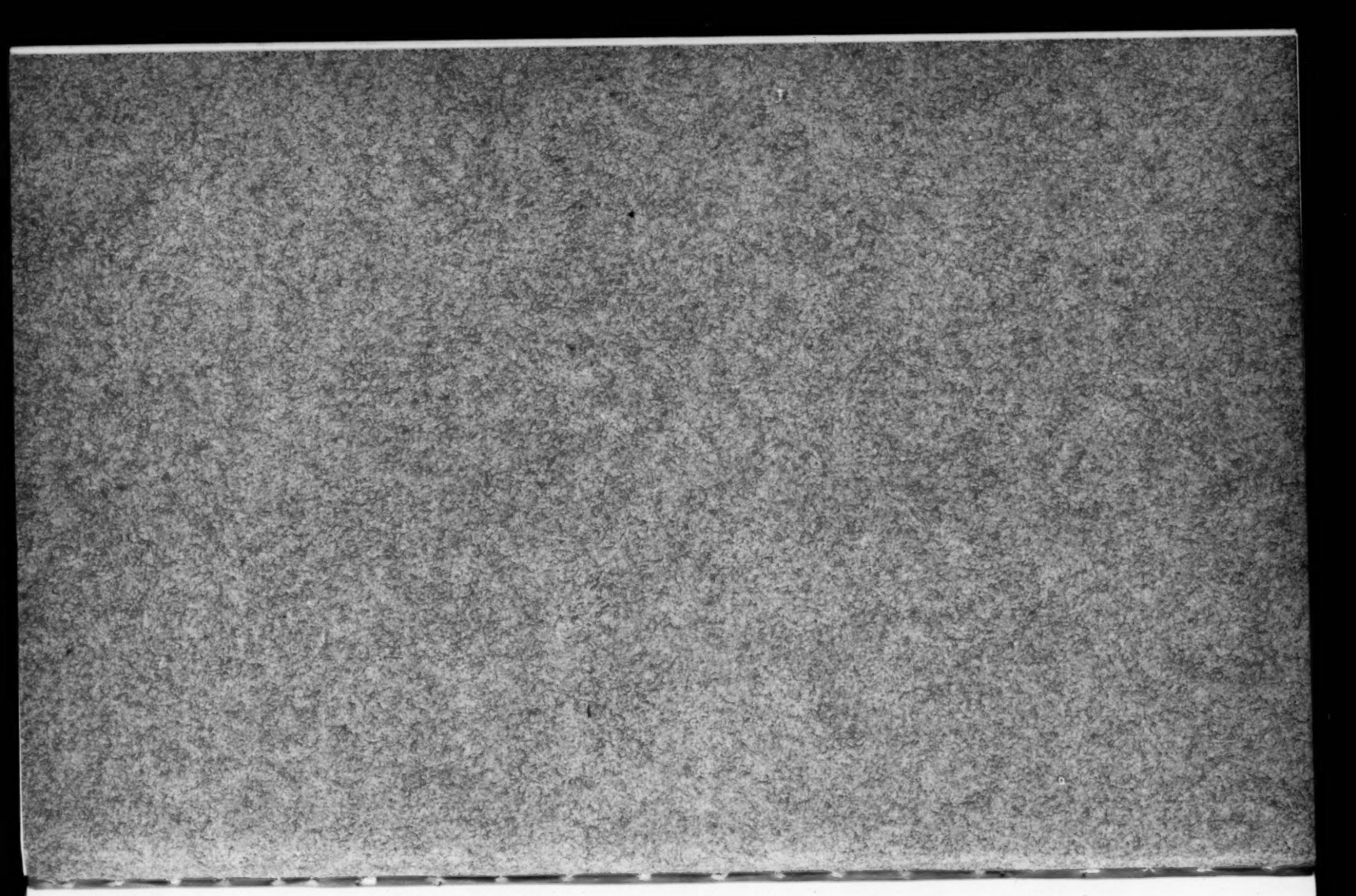
## THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

DECEMBER 1913

35 CENTS A COPY $3 A YEAR

ANNUAL MEETING: DECEMBER 2–5

MONTHLY MEETINGS: PHILADELPHIA, DECEMBER 9;
BOSTON, DECEMBER 18



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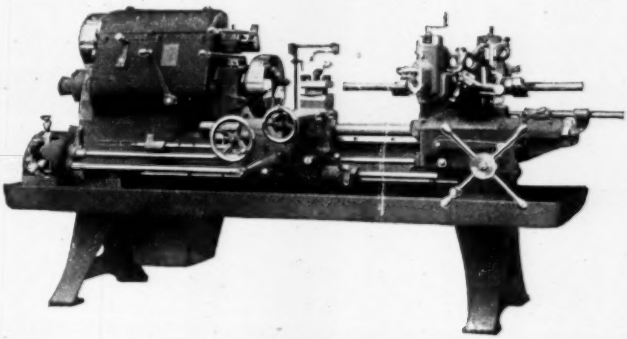

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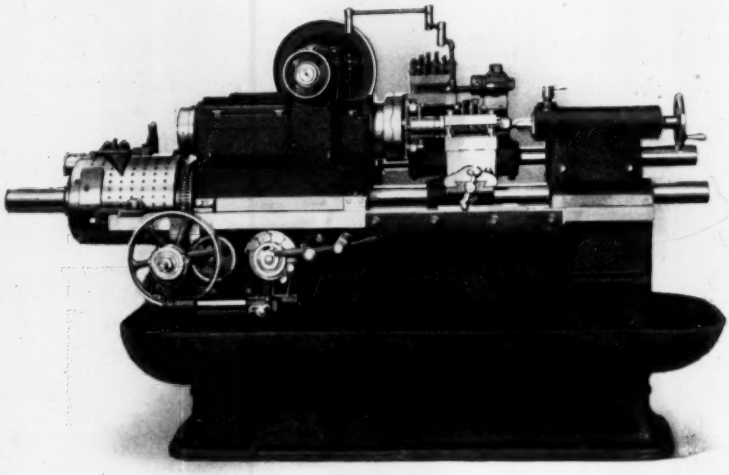

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for work held on centers or on centered arbors; particularly adapted to second operations on turret lathe work

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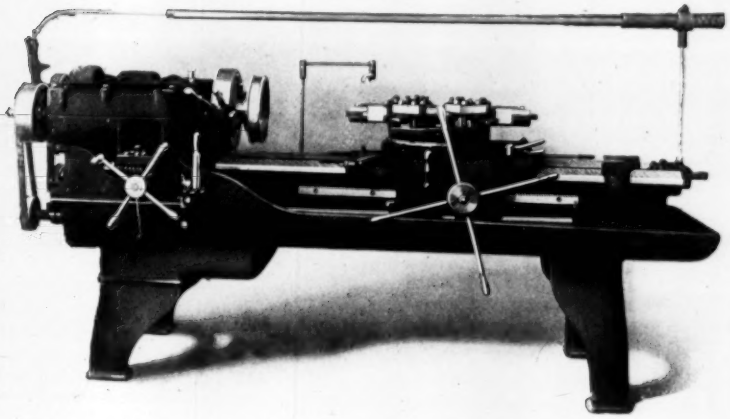
# The Flat Turret Lathe



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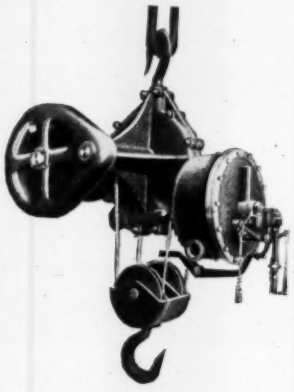

Though the "Imperial" is rated in pounds lifting capacity, its true rating should be in man-power. For the savings it accomplishes are savings of man-power—and man-power is costly.

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An "Imperial" Motor Hoist of suitable size will do the work of many men, at a fraction of cost in time and money. In this respect, therefore, the "Imperial" is equivalent to an increase in your working force with an added expense that is really negligible.

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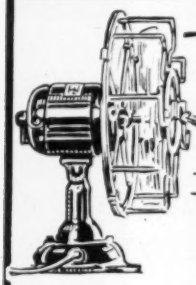

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If the blades of an electric fan were straightened so as to *cut* the air, the fan could be run at its regular speed, at much less cost.

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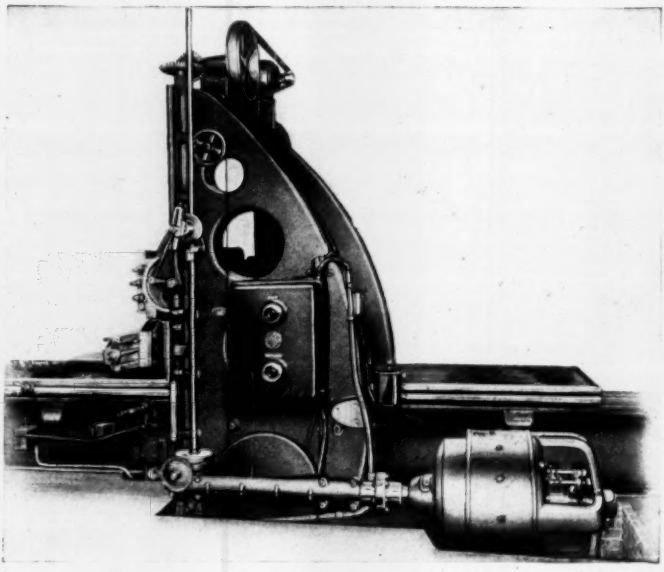

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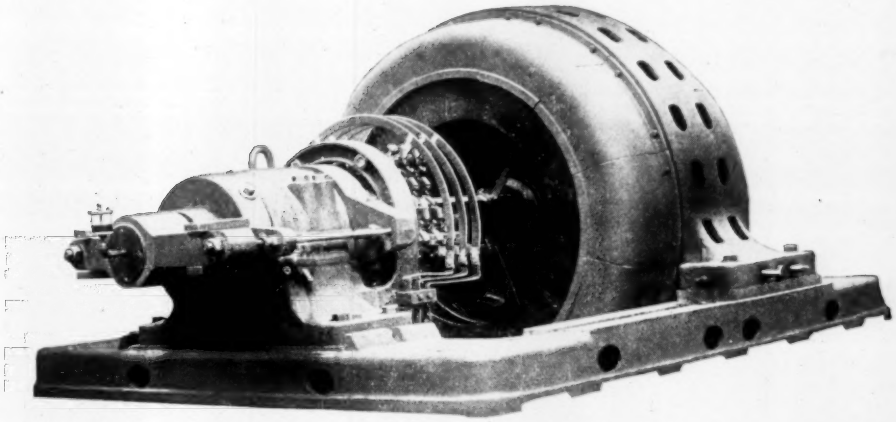

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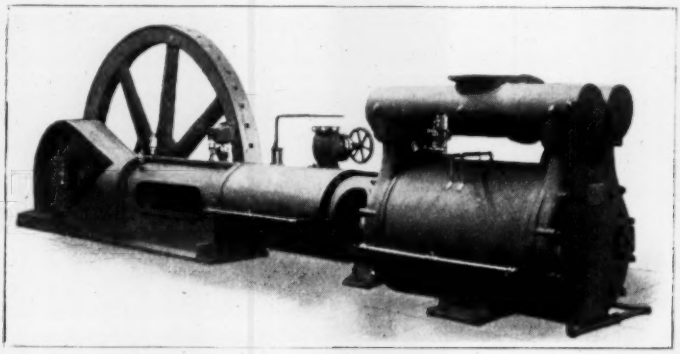

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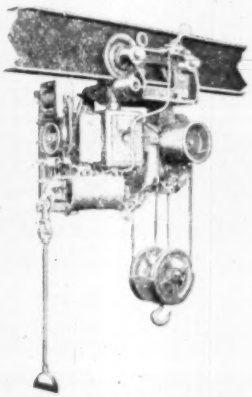

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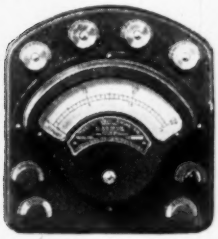

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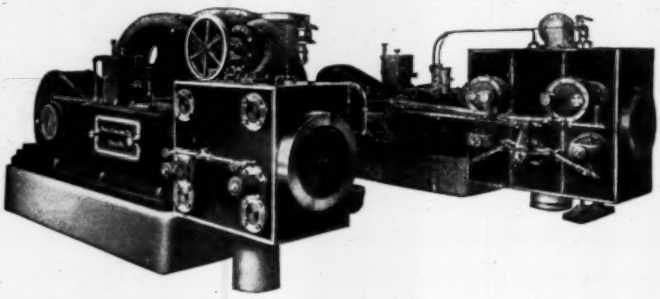

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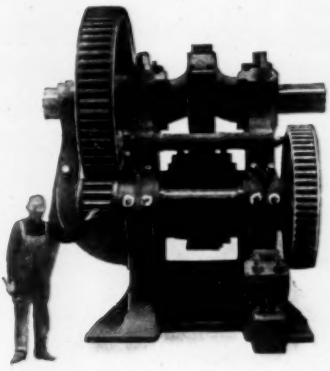

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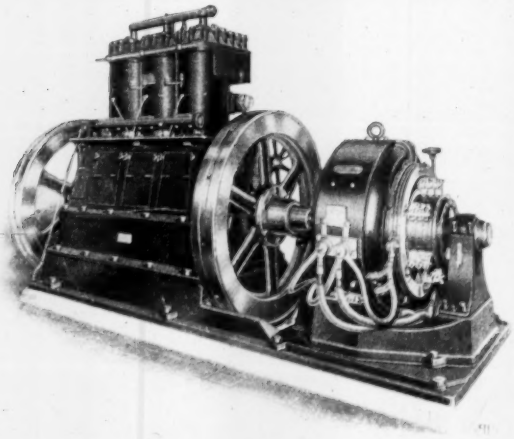

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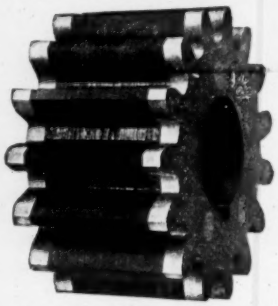

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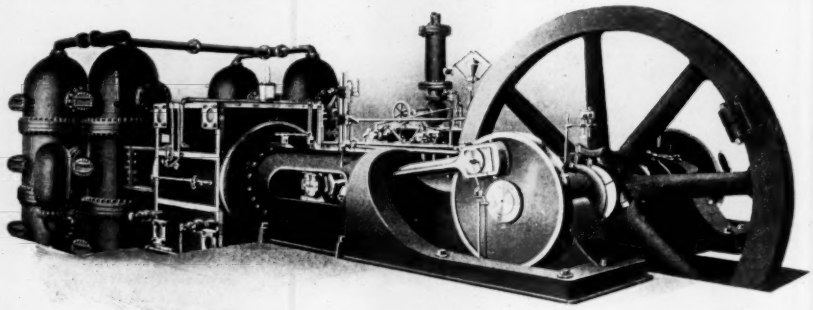

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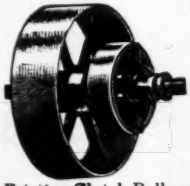

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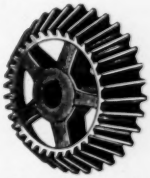

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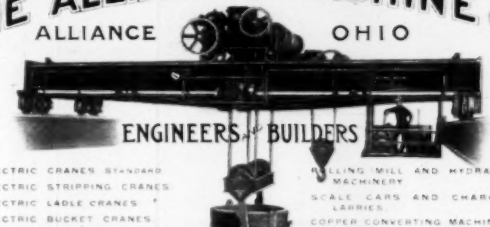

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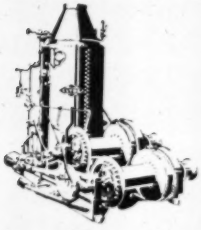

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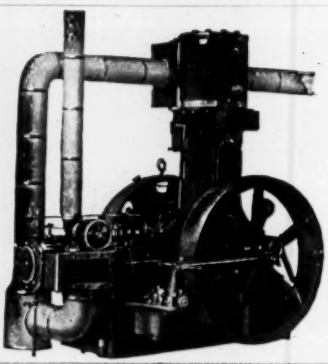

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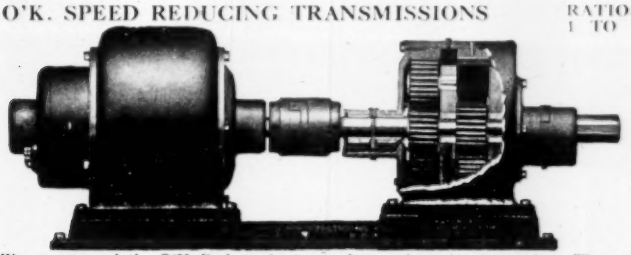

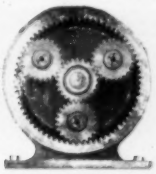

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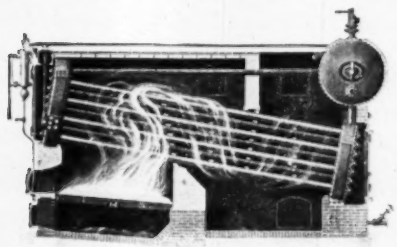

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